

Remarks

The various parts of the Office Action are discussed below under similar headings.

Examiner's Notes

The Examiner noted certain informalities. The changes suggested by the Examiner have been made. With respect to claim 20, instead of deleting the term "e.g.", claim 21 was amended to delete the phrase "curved in e.g. a circular or semicircular curve". Also claims 10 and 27 have been amended by deleting the phrase "e.g., elliptical", in the respective claims.

Claim Rejections - 35 USC § 112

The Examiner rejected claim 21 under 35 U.S.C. §112, ¶2, as being indefinite. Claim 21 has been amended for clarity by replacing the term "means" with "element". The term "means" in claim 21 was not being used in its legal (§112) sense, but rather as a positive recitation of structure. This objective is equally served by the term "element". Accordingly, the rejection is now moot and should be withdrawn.

Claim Rejections - 35 USC § 102 and § 103

The Examiner rejected claims 21, 22, 24, 26, 28, 29, 30, and 32 under 35 U.S.C. §102(b) as being anticipated by Rabinowitz (U.S. Patent No. 5,764,004). In addition, the Examiner rejected claims 1, 3, 5, 9, 11-13, 15 and 17 under 35 U.S.C. §103(a) as being unpatentable over Rabinowitz (U.S. Patent No. 5,764,004) in view of Jones et al. (U.S. Patent No. 5,371,431).

Independent claim 21 is directed to a field emission cathode and independent claim 1 is directed to a light source comprising, inter alia, a field emission cathode. Rabinowitz, the primary reference relied upon by the Examiner, has not been found to disclose a field emission cathode as recited in the claims. Instead, Rabinowitz has been found to disclose a thermionic emission cathode. According to Rabinowitz:

The instant invention relates to a greatly improved emissive cathode which combines **thermionic emission** with a moderately high to high electric field for barrier reduction and field emission in a novel structure that is less expensive to manufacture and more rugged than its existing counterparts. The combination of thermionic emission and a moderate electric field is called **Schottky emission**...

* * *

There are clear advantages for the instant invention in the case of a flat panel display which requires a relatively large cathode area, because the present invention avoids excessive power loss due to radiation and

conduction loss by permitting operation of the cathode at a significantly lower temperature than if it operated solely as a thermionic emitter. Additionally the moderate to high electric field mitigates against space charge limitations of the current. **There are also clear advantages for the present invention over purely field emitting cathodes** in a flat panel display: 1) as there is an additional control over the emission current; 2) the effects of asperity tip dulling are mitigated both by regeneration and separate control of emission; 3) expensive processes for making a precisely similar and precisely arranged multitude array of field emitting cathodes are avoided; and **4) the immediate invention results in a more robust cathode than the field emission cathode** in which microscopic spacing between anode and cathode and its maintenance is critical.

(Col. 1: line 17 - Col. 2: line 7) (Emphasis added). Accordingly, Rabinowitz has not been found to disclose the "field emission cathode" set forth in independent claims 1 and 21. For at least this reason, it is respectfully submitted that the Examiner's rejections of claim 21 and claims 22, 24, 26, 28, 29, 30 and 32 under 35 U.S.C. § 102(b) should be withdrawn.

Likewise, the Examiner's rejection of claims 1, 3, 5, 9, 11-13, 15 and 17 under 35 U.S.C. §103(a) should also be withdrawn. Rabinowitz taken alone or in combination with Jones fails to disclose or fairly suggest the light source of claim 1. Again, the Examiner relies upon Rabinowitz for disclosing a "field emission cathode". However, as discussed above, Rabinowitz has not been found to disclose the claimed "field emission cathode".

In addition, the Examiner relies on Jones to supplement the teaching of Rabinowitz. However, it is respectfully submitted that this rejection is improper because (1) there is no motivation to combine Rabinowitz and Jones; and (2) even assuming *arguendo* that this unmotivated combination is proper, the cited references, taken alone or in combination, fail to disclose or fairly suggest the claimed invention.

It is noted that the Examiner carries the burden of establishing a prima facie case of obviousness. MPEP 2142. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See also *In re Dembiczak*, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999).

In this instance, the record is silent as to any motivation to combine Rabinowitz and Jones. Further, the art of record taken alone or in combination fail to disclose or fairly suggest at least the "field emission cathode" element set forth in the rejected claims. For at least these reasons, it is respectfully submitted that claim 1 and claims 3, 5, 9, 11-13, 15 and 17 dependent therefrom distinguish patentably over the combination of Rabinowitz and Jones. Accordingly, the rejection should be withdrawn.

Allowable Subject Matter

The allowed claims were amended for editorial purposes and to remove reference numerals.

Conclusion

In view of the foregoing, request is made for timely issuance of a notice of allowance.

Respectfully submitted,

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